

December 2, 2019

Ms. Melanie Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition No. 1387
Bloom Energy Corporation
160 Old Amston Road, Colchester, CT
Interrogatories
BE Project No. EVS000.A

Dear Ms. Bachman:

On behalf of the Applicant, Bloom Energy submits the following documents, original and 15 copies, in response to the Interrogatories for Petition No. 1387, Bloom Energy Corporation, 160 Old Amston Road, Colchester, CT.

Sincerely,



Justin Adams
Permitting Manager

Bloomenergy
justin.adams@bloomenergy.com

Our response is indicated in bold type following each interrogatory contained in the Interrogatory Letter dated November 19, 2019.

1. Has a power purchase agreement (PPA) with Eversource been executed for the proposed 10 MW facility? If not, when would the PPA be finalized? What is the length of the PPA, e.g. 20 years? What authority approves the power purchase agreement (PPA) for the facility, e.g. Public Utility Regulatory Authority? When does Bloom anticipate receiving approval of the PPA? Are there provisions for any extension of time in the PPA? Is there an option to renew?

The two PPAs (~20% UI, ~80%) were executed on Oct 19, 2018. They were selected by CT DEEP, and then approved by PURA. At the conclusion of the 20-year contract, Bloom may renew the contract, decommission the Facility, or sell into the wholesale ISO NE market.

2. The Petitioner proposes a mix of 300 kW and 250 kW fuel cell units. However, Exhibit 1 of the Petition includes a 250-kW fuel cell specifications sheet only. Please provide a specifications sheet for the 300-kW fuel cell unit.

The specification sheet for the 300-kW fuel cell unit is attached (see Amended Exhibit 1) as part of this resubmission.

3. Page 6 of the Petition notes that, "The Bloom Energy Servers will be configured in four (4) systems each capable of producing 2.5 MW of electricity, referred to hereinafter as Stamps(s)." Would each Stamp consist of five 300-kW units and four 250-kW units.

Yes, that is the correct configuration of energy servers for each of the four (4) 2.5MW Stamps.

4. Referencing Drawing No. C1.1 under Exhibit 2 of the Petition, what is the 8-foot by 25-foot concrete gas pad to be used for? If it is to be used for natural gas equipment, why are no natural gas lines depicted as connecting to the concrete pad area?

This was an error on the original submission. Sheet C1.1 has been revised to show the correct natural gas routing at the facility (see Amended Exhibit 2).

5. Would any nitrogen cylinders be stored on site? If yes, what size cylinders and how many?

No nitrogen will be stored on site.

6. Referencing Drawing No. C1.1 under Exhibit 2 of the Petition, Reference Sheet Notes No. 26 states, "Proposed paved site access entrance with parking area for service vehicles." There does not appear to be a No. 26 depicted on this drawing. Would the only paved surface for this project be the "New Paved Apron" off of Old Amston Road?

The note on the plan has been revised. Note #26 is now referenced on the drawing, denoting the proposed gravel access drive to the facility. The only paved surface for this project is the 'new paved apron' off of Old Amston Road, which does not have an associated reference note attached to it (see Amended Exhibit 2).

7. Referencing Drawing No. G0.1 under Exhibit 2 of the Petition, Bloom Energy FAQ's, it states, "If utility provided power is lost for any reason, the fuel cell system will also stop producing power. The fuel cell system will remain in stand-by mode until it automatically senses the utility grid has been restored." Would the fuel cell facility then automatically re-start upon restoration of utility grid power?

The fuel cell will automatically restart upon restoration of utility grid power. When the grid voltage returns, the inverter will reconnect after two 5 minute timers (inverter and redundant inverter controller both have timers in series). We are providing utility accessible electrical disconnects.

8. Please identify the media to be used for pipe cleaning procedures at the proposed facility in accordance with Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission

Nitrogen will be used for the pipe cleaning procedures at the proposed facility in accordance with Public Act 11-101.

9. Referencing Exhibit 7 of the Petition, page 2 of the Acoustic Review notes that the proposed fuel cell facility would be a Class C emitter. Would the fuel cell facility be considered a Class B emitter per the Connecticut Department of Energy and Environmental Protection (DEEP) Noise Control Regulations? If yes, would any noise mitigation measures be required to comply with DEEP Noise Control Standards?

Please see the attached reply (see Amended Exhibit 7) from the acoustic consultant, Cavanaugh Tocci, who prepared the sound analysis for this petition.

10. Is the project interconnection required to be reviewed by ISO-NE?

Yes, the project is currently under review by ISO-NE. We expect the review to be complete in January/February 2020.

11. Page 6 of the Petition notes that the facility would require 3,456 gallons of water at start-up. Would the facility only require the water during the (one time) initial commissioning start-up, or every time the unit starts up? Would there be a constant or intermittent water consumption during normal operation?

The facility will require water every time the units starts up, which should be infrequent. This would be during start up, during maintenance, and grid outages. The facility does not require constant or intermittent water consumption during normal operation.

12. Would construction of the proposed project impact any existing wells in the area or other groundwater given that the site is located within DEEP's Class GA and Class GAA water classification areas?

The Petitioner is not aware of any existing wells in the area. Potential short-term temporary impacts associated with the Project's construction activities will be minimized by the proposed sedimentation and erosion controls which will be installed and maintained throughout the duration of construction in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*. In addition, the proposed Wetland and Vernal Pool Protection Plan shall provide additional measures to protect water resources during construction of the Project. Therefore, the proposed project will not have a significant negative impact to any existing wells in the area or other groundwater resources.

13. Is the proposed natural gas line extension onto Old Amston Road sized for the proposed facility only or for future expansion to provide service to customers on/off Old Amston Road? In case of an emergency, would the gas be turned off at the site or the main? When is the future gas main to be installed?

The natural gas line extension onto Old Amston Road will be a 6 inch main and is sized for future expansion to customers on/off Old Amston Road. Depending on the type and nature of the emergency, the gas can be shutoff either remotely offsite or manually onsite. Eversource is able to turnoff at the meter connection on the gas pad remotely via a wireless connection monitored 24/7, Bloom Energy can shut down the fuel cell remotely from their RMCC as described in the petition, and the fuel cells also have internal sensors capable of detecting emergency conditions and stopping the flow of natural gas automatically. If the natural gas were to be shutoff onsite, there will be a manual valve located at the gas pad. Eversource has committed to provide gas, via the new gas main, to the site in the third quarter of 2020.

14. Would the proposed water line extension onto Old Amston Road be sized for only the proposed facility, or would it be able to support other nearby customers?

The proposed water line extension is sized to support other nearby customers.

15. Would Bloom (or Eversource, as applicable) obtain the required permitting for off-site electrical, gas and water connections?

Bloom Energy is in the process of permitting the water and gas main extensions from their source on the Airline Trail in coordination with Town of Colchester. There is no off-site electrical work proposed by Bloom as the electrical work will terminate at a new utility pole on Old Amston Road. Any work beyond and including the installation of the new utility pole is the responsibility of Eversource.

16. Referencing Drawing No. C1.1, a six-foot tall fence is proposed. Would a seven-foot fence be required to comply with the National Electrical Code or any other applicable codes? If yes, please revise Drawing Nos. G 1.1 and C 1.1 to reflect the fence height.

Per NFPA 853, the Standard for the Installation of Stationary Fuel Cell Power Systems, there is no requirement that a fence must be used to enclose/protect a fuel cell power system. In addition, there is no mention of a minimum or maximum height for a fence that encloses a fuel cell power system.

The energy server facility is not required to be placed within a fenced enclosure. The equipment is safe and the systems, switchgear, and transformers are all tamper proof. The fence was proposed for the reason of defining the facility area and to provide an enclosure to deter anyone from entering the site. We have several installations that are not within fenced enclosures. The UL category that our product is listed to requires the system to be tamper proof and touch safe for the intended installations of public access.

In regards to the system being touch safe, Para. 4.4.10 of FC 1 states that “the manufacturer shall take steps to eliminate any risk of injury caused by contact with, or proximity to, external surfaces of the fuel cell power system enclosure, handle, grips or knobs at high temperatures.”

For cabinets/enclosure being tamper proof, Para. 4.13.8 requires that “any access panel, cover or door that is intended to protect equipment from entry by users or untrained personnel shall have means for retaining it in place and shall require the use of a tool, key or similar mechanical means to open.” In addition, Para. 5.1.1(4) of NFPA 853 states that a fuel cell power system “shall be protected against access by unauthorized persons commensurate with the location and installation environment.” A special tool is needed in order to get access to the inside of our systems.

Since our system is UL Listed to ANSI/CSA FC 1 and installed per NFPA 853 requirements, it complies with these requirements.

17. How would Bloom set the pipe into place and remove the old culvert? How would the replacement pipe be installed to ensure safe fish passage? Would Bloom file a Self-Verification form (or other permitting as applicable) with the U.S. Army Corps of Engineers for the culvert replacement?

Bloom Energy is in the process of preparing and filing a Self-Verification Notification Form with the U.S. Army Corps of Engineers for the referenced culvert replacement. The culvert replacement shall comply with those requirements of the New England District of the U.S. Army Corps of Engineers General Permit 19 Stream, River & Brook Crossing and therefore shall be eligible as a Self-Verification Project. The culvert replacement shall occur in such a manner as to comply with those guidelines outlined in the Connecticut Department of Environmental Protection Inland Fisheries Division Habitat Conservation and Enhancement Program Stream Crossing Guidelines document referenced by the Army Corps of Engineers. These standards to be met include the invert of the culvert being set no less than 1 foot below the existing streambed elevation, the culvert gradient being no steeper than the streambed gradient upstream or downstream of the existing crossing structure, the replacement culvert alignment will mimic the existing culvert alignment to ensure proper water conveyance, the length of the culvert will be minimized, the width of the culvert shall span an area at least 1.2 times the bank full width of the upslope stream, and the culvert shall maintain an Openness Ratio of greater than 0.25. The culvert installation shall follow a phasing to be determined by the contractor but shall include the use of dewatering techniques (as per the 2002 Guidelines for Soil and Sediment Control produced by CT DEEP) to provide temporary flow across the trail during culvert replacement to prevent the risk of sediment

release. With dewatering in place, the existing culvert will be free to be removed and replaced with the new culvert that shall comply with the above referenced stream crossing standards.

18. Estimate the tree clearing area in acres to develop the project footprint on Drawing No. C1.1. Would grubbing occur up to the "Limits of Disturbance," or would tree stumps remain outside of the fenced compound area?

The tree clearing area is approximately 1.1 acres. Grubbing would not occur up to the limits of disturbance. Tree stumps would remain outside of the fenced compound area.

19. What is the host municipality's setback regulation from wetlands? Drawing No. C1.1 shows a 100-foot wetland buffer. The eastern portion of the project footprint is located within this 100-foot buffer. Please revise Drawing No. C1.1 to reflect the municipal wetland buffer.

The Town of Colchester Conservation Commission regulates a 75-foot Upland Review Area to wetlands and 100-foot Upland Review Area to the ordinary high-water mark to watercourses. Drawing No. C1.1 has been revised to show the municipal 75-foot Upland Review Area to the delineated wetland boundary.

20. Referencing Exhibit 8 of the Petition, would the proposed project be consistent with the 2015 U.S. Army Corps of Engineers Vernal Pool Best Management Practices?

Construction and operation of the Facility would not result in direct physical impact to any of the identified vernal pool habitats. Likewise, construction and operation of the Facility would not result in any direct physical impacts to the 100-foot Vernal Pool Envelope of any of the vernal pool habitats. The proposed Facility is located more than 172 feet from the leading edge of the nearest vernal pool habitat (Vernal Pool 3). The results of the vernal pool analysis support that both the pre-development and post-development condition will not exceed the 25% developed threshold within the 100-750 foot Critical Terrestrial Habitat for each of the three (3) vernal pools. As such, the proposed Project is consistent with guidelines from the U.S. Army Corps of Engineers New England District's *Vernal Pool Best Management Practices* ("BMPs") (January 2015).

Furthermore, the Applicant has proposed a Wetland and Vernal Pool Protection Program (see Amended Exhibit 8 attached) that includes Best Development Practices outlined in *Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Development in the Northeastern U.S.* (Calhoun & Klemens; 2002) to avoid/minimize the potential for short-term impact to herpetofauna during construction activities.

21. Page 31 of the Petition notes that, "The construction of the proposed Facility will result in approximately 550 square feet of impact to an area mapped as Prime Farmland soils. The resultant impact of the project on approximately 6 acres of mapped Prime Farmland is less than 0.002%." Would the correct percentage be approximately 0.2 percent?

Yes, the correct percentage is 0.2%.

22. Page 14 of the Petition notes that, "[T]he facility would be located within an area of minimal flood hazard Zone X." Is this the "unshaded" or "shaded" Zone X?

Per FEMA FIRM No. 09011C0152G, effective date July 18, 2011, the facility is located in the unshaded Zone X.

23. Has the Petitioner submitted an application for a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) to DEEP? If no, approximately when does Bloom anticipate filing for the General Permit?

The Petitioner has not submitted an application for a General Permit. The Petitioner anticipates filing an application for the General Permit in Quarter 1 of 2020.

24. Would there be lighting in use for nighttime work activities?

No lighting is proposed on site. There is no planned work at night. In the event lighting is needed for unscheduled maintenance, Bloom will supply on-demand portable lighting as necessary.

25. Identify the tallest proposed equipment to be installed within the fenced compound and estimate its height above grade.

The tallest proposed equipment to be installed within the fenced facility area is the MV and LV switchgear, which is approximately 90" tall and will be set on a pad approximately 2" above grade for a total height of 92" or 7.5' above grade.

26. Is the Eversource Judd Brook Substation a 23-kV/13.8-kV distribution substation with no connections to transmission (i.e. 69-kV or higher)? What is the status of the interconnection study and agreement? Was a study performed to confirm that Eversource's distribution system can handle the 10 MW output? What would happen during low load periods?

There are no transmission connections at the Eversource Judd Brook Substation. Eversource has completed the Impact Study, evaluating all necessary loading conditions, and has determined that there will be no adverse impacts to the system when the generator is placed online.

Amended Exhibit 1

Energy Server™ 5

Always On, Clean Energy
Using Patented Solid Oxide
Fuel Cell Technology



The Energy Server 5 provides combustion-free electric power with these benefits



Clean

Our systems produce near zero criteria pollutants (NO_x, SO_x, and particulate matter) and far fewer carbon emissions than legacy technologies.



Reliable

Bloom Energy Servers are designed around a modular architecture of simple repeating elements. This enables us to generate power 24 x 7 x 365 and can be configured to eliminate the need for traditional backup power equipment.



Resilient

Our system operates at very high availability due to its fault-tolerant design and use of the robust natural gas pipeline system. Bloom Energy Servers have survived extreme weather events and other incidences and have continued providing power to our customers.



Simple Installation and Maintenance

Our Energy Servers are 'plug and play' and have been designed in compliance with a variety of safety standards. Bloom Energy manages all aspects of installation, operation and maintenance of the systems.

Energy Server 5		Technical Highlights (ES5-YA8AAN)
Outputs		
Nameplate power output (net AC)		300 kW
Load output (net AC)		300 kW
Electrical connection		480V, 3-phase, 60 Hz
Inputs		
Fuels		Natural gas, directed biogas
Input fuel pressure		10-18 psig (15 psig nominal)
Water		None during normal operation
Efficiency		
Cumulative electrical efficiency (LHV net AC) ¹		65-53%
Heat rate (HHV)		5,811-7,127 Btu/kWh
Emissions²		
NOx		0.0017 lbs/MWh
SOx		Negligible
CO		0.034 lbs/MWh
VOCs		0.0159 lbs/MWh
CO ₂ @ stated efficiency		679-833 lbs/MWh on natural gas; carbon neutral on directed biogas
Physical Attributes and Environment		
Weight		15.8 tons
Dimensions (variable layouts)		17'11" x 8'8" x 6'9" or 32'3" x 4'4" x 7'2"
Temperature range		-20° to 45° C
Humidity		0% - 100%
Seismic vibration		IBC site class D
Location		Outdoor
Noise		< 70 dBA @ 6 feet
Codes and Standards		
Complies with Rule 21 interconnection and IEEE1547 standards		
Exempt from CA Air District permitting; meets stringent CARB 2007 emissions standards		
An Energy Server is a Stationary Fuel Cell Power System. It is Listed by Underwriters Laboratories, Inc. (UL) as a 'Stationary Fuel Cell Power System' to ANSI/CSA FC1-2014 under UL Category IRGZ and UL File Number MH45102.		
Additional Notes		
Access to a secure website to monitor system performance & environmental benefits		
Remotely managed and monitored by Bloom Energy		
Capable of emergency stop based on input from the site		
¹ 65% LHV efficiency verified by ASME PTC 50 Fuel Cell Power Systems Performance Test		
² NOx and CO measured per CARB Method 100, VOCs measured as hexane by SCAQMD Method 25.3		

About Bloom Energy

Bloom Energy's mission is to make reliable, clean energy affordable for everyone in the world. The company's product, the Bloom Energy Server, delivers highly reliable and resilient, Always On electric power that is clean and sustainable. Bloom's customers include twenty-five of the Fortune 100 companies and leaders in cloud services and data centers, healthcare, retail, financial services, utilities and many other industries.

Amended Exhibit 2

Bloomenergy®
4353 N 1ST STREET
SAN JOSE, CA 95134
PROPRIETARY AND CONFIDENTIAL

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153 Cordaville Road, Suite 210
Southborough, MA 01772
t: 508 229 0032

ENGINEER OF RECORD
STEPHEN POWERS, P.E.
LICENSE # 0030199

CUSTOMER SITE
EVERSOURCE
160 OLD AMSTON ROAD
COLCHESTER, CT 06415



REVISION HISTORY	
REV	REVISION ISSUE
1	INITIAL RELEASE

DESIGNED BY KATE TAYLOR	REVIEWED BY CHAD FEARSON
DRAWN BY SURESH KUMAR	APPROVED BY GREENBERG FARROW

SHEET TITLE COVER SHEET	
DRAWING NUMBER G0.1	
BLOOM DOCUMENT DOC-1010853	
THIS DRAWING IS 24" X 36" AT FULL SIZE SITE ID: EVS000.0	SHEET 01 OF 19



**Know what's below.
Call before you dig.**

PRIOR TO COMMENCING ANY EXCAVATION OR DEMOLITION, THE CONTRACTOR SHALL CONTACT 811 TO LOCATE ALL UTILITIES, BUT NOT LIMITED TO ELECTRICAL, GAS, WATER, CABLE, AND TELEPHONE. REQUESTING A UTILITY MARK OUT AND AS NECESSARY, RETAIN THE SERVICES OF A PRIVATE UTILITY MARK OUT COMPANY TO PERFORM SUCH MARK OUT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND VERIFY THE LOCATION OF ALL UTILITIES. IRRIGATION, SITE DRAINAGE, AND ELECTRICAL LINES IN THE VICINITY OF THE CONSTRUCTION FOR THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR ANY AND ALL UTILITIES DAMAGED BY THE CONTRACTOR'S OPERATION AT NO ADDITIONAL EXPENSE.

BLOOM ENERGY FAQ's

- Q: WHAT IS A BLOOM ENERGY SERVER?
A: THE BLOOM ENERGY SERVER IS A STATIONARY FUEL CELL POWER SYSTEM.
- Q: IS THE BLOOM PRODUCT LISTED OR CERTIFIED?
A: YES. ES-5XXX SERIES.
- THE FUEL CELL IS UL LISTED AS A "STATIONARY FUEL CELL POWER SYSTEM" TO ANSI/CSA AMERICA FC 1-2004.
 - IT IS UL LISTED UNDER UL CATEGORY IRGZ AND UL FILE NUMBER WH45102.
- ES5 SERIES:
- THE FUEL CELL IS UL LISTED AS A "STATIONARY FUEL CELL POWER SYSTEM" TO ANSI/CSA FC 1-2014.
 - IT IS UL LISTED UNDER UL CATEGORY IRGZ AND UL FILE NUMBER MH45102.
- Q: WHERE ARE FUEL CELLS COVERED IN THE NATIONAL ELECTRICAL CODE (NEC)?
A: FUEL CELLS ARE COVERED IN ARTICLE 692 OF THE NEC (NFPA 70). FUEL CELLS HAVE BEEN INCORPORATED INTO THE NEC SINCE 2002.
- Q: WHAT IS THE MODEL NUMBER OF THIS PRODUCT?
A: PLEASE SEE THE DATA SHEET PROVIDED WITH THIS FAQ.
- Q: WHAT IS THE INLET LEVEL OF THE FUEL CELL SYSTEM?
A: FOR SPECIFIC DB RANGES, PLEASE REFER TO THE DATA SHEET PROVIDED WITH THIS FAQ.
- Q: DO BLOOM FUEL CELL SYSTEMS PROVIDE LIFE SAFETY POWER?
A: NO. WE ARE NOT LIFE SAFETY AND DO NOT PROVIDE LIFE SAFETY POWER, EVEN WHEN A UPM IS INSTALLED. WE ARE NOT ALTERING WHATEVER LIFE SAFETY IS CURRENTLY PRESENT AT THE FACILITY.
- Q: IS THE BLOOM FUEL CELL SYSTEM TAMPER-PROOF?
A: YES. THE FUEL CELLS ARE SECURED IN PLACE AND DOORS ARE SECURED AND LOCKED. ONLY BLOOM SERVICE PERSONNEL HAVE THE KEYS AND CAN BE ON-SITE WITHIN 24 HOURS.
- Q: WHAT HAPPENS TO THE CUSTOMER FACILITY POWER IF THE FUEL CELLS SHUT DOWN?
A: THE FUEL CELL SYSTEM IS OPERATED IN GRID-PARALLEL MODE. IF THE UTILITY GRID IS OPERATIONAL, THE CUSTOMER FACILITY WILL RECEIVE POWER FROM THE GRID AND NOTICE NO DIFFERENCE.
- Q: WHAT HAPPENS TO THE FUEL CELL SYSTEM WHEN THE UTILITY POWER SHUTS DOWN?
A: IF UTILITY PROVIDED POWER IS LOST FOR ANY REASON, THE FUEL CELL SYSTEM WILL ALSO STOP PRODUCING POWER. THE FUEL CELL SYSTEM WILL REMAIN IN STAND-BY MODE UNTIL IT AUTOMATICALLY SENSES THE UTILITY GRID HAS BEEN RESTORED.
- Q: WHAT HAPPENS TO THE FUEL CELL SYSTEM WHEN THE UTILITY GAS SHUTS DOWN?
A: IF THE UTILITY GAS IS INTERRUPTED, THE FUEL CELL SYSTEM WILL AUTOMATICALLY SHUT DOWN AS WELL.
- Q: CAN THE FUEL CELL SYSTEM BE SHUT DOWN LOCALLY IN CASE OF AN EMERGENCY?
A: YES. IF THE FUEL CELL MUST BE SHUT DOWN RIGHT AWAY--FOR EXAMPLE, IN CASE OF A BUILDING FIRE OR ELECTRICAL HAZARD--TWO SHUTOFF CONTROLS ARE INSTALLED AT THE FACILITY EXTERNAL TO THE SYSTEM. THE LOCATIONS OF THESE TWO CONTROLS SHOULD BE KNOWN TO THE FACILITIES MANAGER BEFORE OPERATION AND SHOULD BE NOTED ON THE SITE DIAGRAM THAT IS CREATED FOR EACH SITE DURING INSTALLATION. THE TWO SHUTOFFS ARE:
- (1) THE ELECTRICAL DISCONNECT SWITCH AND
(2) THE MANUAL NATURAL GAS SHUTOFF VALVE. A THIRD SHUTOFF, AN EMERGENCY POWER OFF (EPO) BUTTON, MAY BE PROVIDED ON-SITE.
- Q: DOES THE BLOOM FUEL CELL SYSTEM OPERATE 24/7?
A: YES.
- Q: ARE THE BLOOM FUEL CELL SYSTEMS MONITORED?
A: YES. BLOOM FUEL CELL SYSTEMS ARE CONTROLLED REMOTELY AND HAVE INTERNAL SENSORS THAT CONTINUOUSLY MONITOR SYSTEM OPERATION. IF SAFETY CIRCUITS DETECT A CONDITION OUTSIDE NORMAL OPERATING PARAMETERS, THE FUEL SUPPLY IS STOPPED AND INDIVIDUAL SYSTEM COMPONENTS ARE AUTOMATICALLY SHUT DOWN. A BLOOM ENERGY REMOTE OPERATOR CAN ALSO REMOTELY INITIATE ANY EMERGENCY SEQUENCE. AN EMERGENCY STOP ALARM INITIATES AN AUTOMATIC SHUTDOWN SEQUENCE THAT PUTS THE SYSTEM INTO "SAFE MODE" AND CAUSES IT TO STOP EXPORTING POWER. IF YOU HAVE QUESTIONS ABOUT ANY OF THESE SAFETY FEATURES, PLEASE CONTACT BLOOM ENERGY AT CUSTOMERCARE@BLOOMENERGY.COM.
- Q: WHAT ARE THE EMISSIONS GENERATED BY BLOOM FUEL CELL SYSTEMS?
A: THE SPECIFIC PERCENTAGE OF CARBON EMISSION REDUCTIONS ARE DEPENDENT ON YOUR STATE'S GENERATION MIX, BUT BLOOM FUEL CELL SYSTEMS VIRTUALLY ELIMINATE NOX, SOX, AND OTHER CRITICAL AIR POLLUTANTS THAT ARE FOUND IN TRADITIONAL ELECTRICITY GENERATION METHODS. FOR SPECIFIC EMISSIONS RANGES, PLEASE REFER TO THE DATA SHEET PROVIDED WITH THIS FAQ.
- Q: WHAT IS THE SUSTAINABILITY IMPACT OF BLOOM FUEL CELL SYSTEMS?
A: BLOOM FUEL CELL SYSTEMS GENERATE ELECTRICITY ON-SITE THROUGH AN EFFICIENT ELECTROCHEMICAL REACTION WITHOUT COMBUSTION. DUE TO THE HIGH EFFICIENCY (65%-53% COMPARED TO A COMBINED CYCLE NATURAL GAS PLANT WITH EFFICIENCY OF 40-45% OR COAL PLANTS AT 35%) BLOOM ENERGY SERVERS REDUCE CARBON EMISSIONS BY 20-50% COMPARED TO THE US GRID EMISSION RATES. THE VARIATION IN EMISSIONS REDUCTION IS DUE TO THE VARIATION IN HOW DIFFERENT STATES GENERATE ELECTRICITY. IN ADDITION, BLOOM FUEL CELL SYSTEMS USE NO WATER DURING NORMAL OPERATION.



160 OLD AMSTON ROAD
COLCHESTER, CT 06415

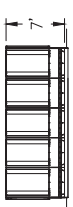


PROJECT DESCRIPTION

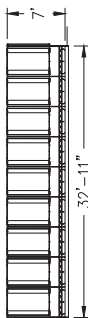
THIS PROJECT CONSISTS OF THE INSTALLATION OF THIRTY SIX (36) BLOOM ENERGY ES5 OUTDOOR NATURAL GAS CLEAN ENERGY SERVERS. THE CLEAN ENERGY SERVERS ARE SUPPORTED ON CONCRETE PADS. THE WORK INCLUDES ALL ITEMS LISTED IN THE SCOPE OF WORK.



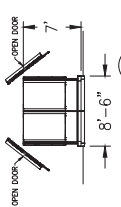
FRONT VIEW (ES-A2 TO ES-A7, ES-B2 TO ES-B7, ES-C2 TO ES-C7, ES-D2 TO ES-D7)



FRONT VIEW (ES-A1, ES-B1, ES-C1 & ES-D1)



FRONT VIEW (ES-AB, AG & ES-BB, BG ES-CB, CG & ES-DB, DG)



FRONT VIEW (A, B, C, D)

SCOPE OF WORK

THE SCOPE OF THIS PROJECT WILL CONSIST OF THE FOLLOWING:

1. CIVIL WORK
 - CONTRACTOR TO REMOVE TREES AND CLEAR AREA FOR INSTALLATION OF ENERGY SERVERS AND ASSOCIATED EQUIPMENT.
 - EQUIPMENT UPGRADE AT LANDSCAPE REMOVAL WILL BE PREPARED FOR THE NEW EQUIPMENT WEIGHT.
 - NEW TRENCH FROM BLOOM ENERGY SERVER TO EXISTING SUBSTATION FOR GAS, WATER AND ELECTRICAL CONNECTIONS BETWEEN BLOOM ENERGY SERVER AND EXISTING SUBSTATION. TRENCH TO BE BACKFILLED AND NEW LANDSCAPE COVER TO BE PROVIDED.
 - NEW ENERGY SERVER PRECAST CONCRETE PADS AND NEW ENERGY CASES--PLACE CONCRETE PADS TO BE PLACED AT PREPARED SURFACE AT LANDSCAPE REMOVAL.
2. ELECTRICAL WORK
 - NEW ELECTRICAL FEEDERS BETWEEN BLOOM ENERGY SERVER AND EXISTING MAIN SERVICE SWITCHBOARD.
3. PLUMBING WORK
 - NEW WATER CONNECTION FROM NEW 8" WATER MAIN TO BLOOM ENERGY SERVER.
 - NEW NATURAL GAS CONNECTION, NEW METER AND REGULATOR REQUIRED.

CODES

- 2012 INTERNATIONAL BUILDING CODE
2012 INTERNATIONAL EXISTING BUILDING CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE
2012 INTERNATIONAL PLUMBING CODE
2012 INTERNATIONAL FUEL GAS CODE
2014 NATIONAL ELECTRICAL CODE (NFPA 70)
2016 CONNECTICUT STATE FIRE SAFETY CODE
2015 INTERNATIONAL MECHANICAL CODE
2012 INTERNATIONAL MECHANICAL CODE

PROJECT TEAM CONTACTS

FIRM	ADDRESS	CONTACT INFO
MANUFACTURER BLOOM ENERGY	1299 ORLEANS DR. SUNNYVALE, CA 94089	(408) 543-1500
CUSTOMER EVERSOURCE	160 OLD AMSTON ROAD, COLCHESTER, CT 06415 UNITED STATES	(800) 286-2000
GREENBERGFARROW (MEP) AMY HADLOW, P.E. 079288	1430 W. PEACHTREE ST. SUITE 200 ATLANTA, GA 30309	(404) 601-4000
GREENBERGFARROW (CIVIL) STEPHEN POWERS, PEN.0030199	153 CORDAVILLE ROAD SUITE 210 SOUTHBOROUGH, MA 01772	(857) 305-0596
GREENBERGFARROW (STRUCTURAL) BILL BORNHORST, P.E.	301 PERMITTER CENTER NORTH, SUITE 100 ATLANTA, GA 30346	(707) 457-2376
GREENBERGFARROW (ELECTRICAL) GUIDO ALVAREZ, P.E.	1430 PEACHTREE STREET, SUITE 200 ATLANTA, GA 30309	(404) 601-4000
WHIESTONE ASSOC., INC. (GEOTECHNICAL CONSULTANT) KEVIN AFEATH, P.E.	35 TECHNOLOGY DRIVE WARREN, NJ 07059	(908) 688-7777

DRAWING INDEX

	REV#	DATE
01 G0.1 COVER SHEET	-	10/16/2019
02 G0.2 GENERAL CONSTRUCTION NOTES	-	10/16/2019
03 G1.1 OVERALL SITE PLAN	-	10/16/2019
04 C1.1 DETAILED SITE PLAN	-	10/16/2019
05 C1.2 GRADING PLAN	-	10/16/2019
06 C2.1 DETAILS SHEET 1	-	10/16/2019
07 C2.2 DETAILS SHEET 2	-	10/16/2019
08 C2.3 DETAILS SHEET 3	-	10/16/2019
09 C2.4 DETAILS SHEET 4	-	10/16/2019
10 C2.5 SOIL EROSION AND SEDIMENT CONTROL DETAILS	-	10/16/2019
11 S0.1 EQUIPMENT PAD GENERAL DETAILS	-	10/16/2019
12 S1.1 EQUIPMENT PAD DETAILS-1	-	10/16/2019
13 S1.2 EQUIPMENT PAD DETAILS-1	-	10/16/2019
14 E1.1A ELECTRICAL CONDUIT LAYOUT AND DUCT BANK DETAILS	-	10/16/2019
15 E1.1B GROUNDING PLAN	-	10/16/2019
16 E3.1A ELECTRICAL SINGLE LINE DIAGRAM STAMP A & B	-	10/16/2019
17 E3.1B ELECTRICAL SINGLE LINE DIAGRAM STAMP C & D	-	10/16/2019
18 M1.1 PLACARD PLAN	-	10/16/2019
19 R0.1 BLOOM ENERGY PRODUCT DATA SHEET	-	10/16/2019

PERMITTING INFORMATION

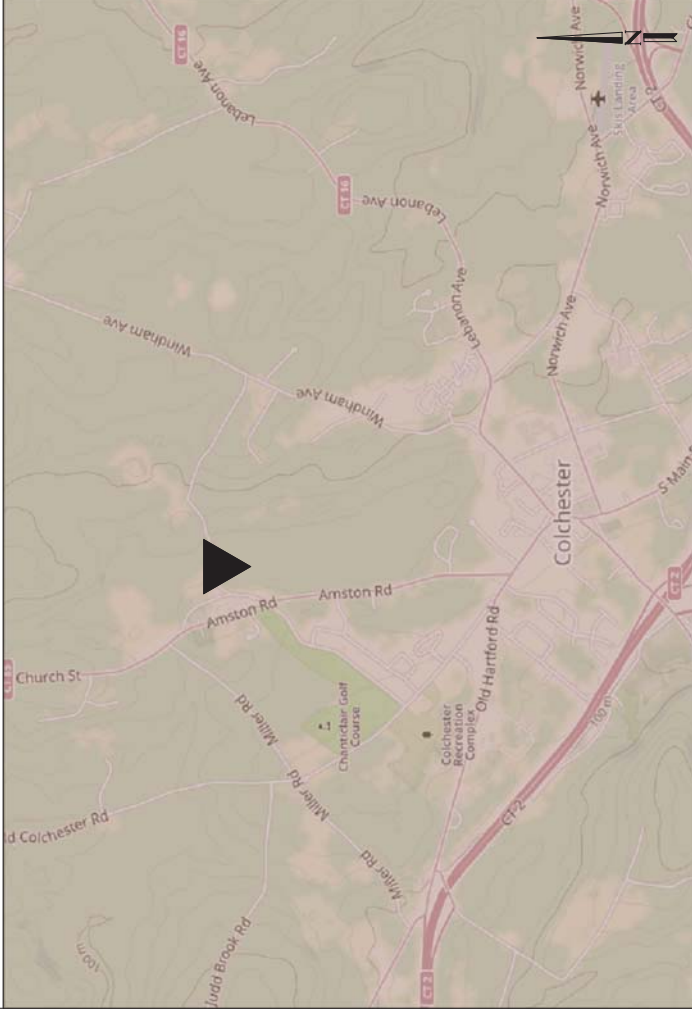
- MUNICIPAL AGENCY
PLANNING
TOWN OF COLCHESTER
FIRE
COLCHESTER FIRE DEPARTMENT
UTILITY
TYPE
NATURAL GAS
ELECTRICAL
WATER
COMPANY
EVERSOURCE (CT)
EVERSOURCE (CT)
TOWN OF COLCHESTER SEWER & WATER DEPARTMENT

SITE INFORMATION

- PARCEL INFORMATION
PROPERTY OWNER
COUNTY
TAX MAP #
EVERSOURCE
NEW LONDON
06-06
- PROPERTY DESCRIPTION
PROPERTY AREA
DISTURBED AREA
12.7 ACRES
39,097 S.F.
- PARKING INFORMATION
EXISTING PARKING*
REQUIRED PARKING*
REMOVED PARKING
ADDED PARKING
FINAL PARKING COUNT
0
0
0
0
- *BASED ON PLAN ENTITLED "PROPERTY & TOPOGRAPHIC SURVEY, LAND OF CONNECTICUT LIGHT & POWER", PREPARED BY MARTIN SURVEY ASSOCIATES, LLC, DATED 09/25/2018.

VICINITY MAP (NTS)

PROJECT SITE





4353 N 1ST STREET
SAN JOSE, CA 95134
PROPRIETARY AND CONFIDENTIAL

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153 Cordaville Road, Suite 210
Southborough, MA 01772
t: 508 229 0032

ENGINEER OF RECORD
STEPHEN POWERS, P.E.
LICENSE # 0030199

EVERSOURCE
160 OLD AMSTON ROAD
COLCHESTER, CT 06415

[illegible]

DESIGNED BY KATE TAYLOR	REVIEWED BY CHAD PEARSON
DRAWN BY SURESH KUMAR	APPROVED BY GREENBERG FARROW

SHEET TITLE

OVERALL
SITE PLAN

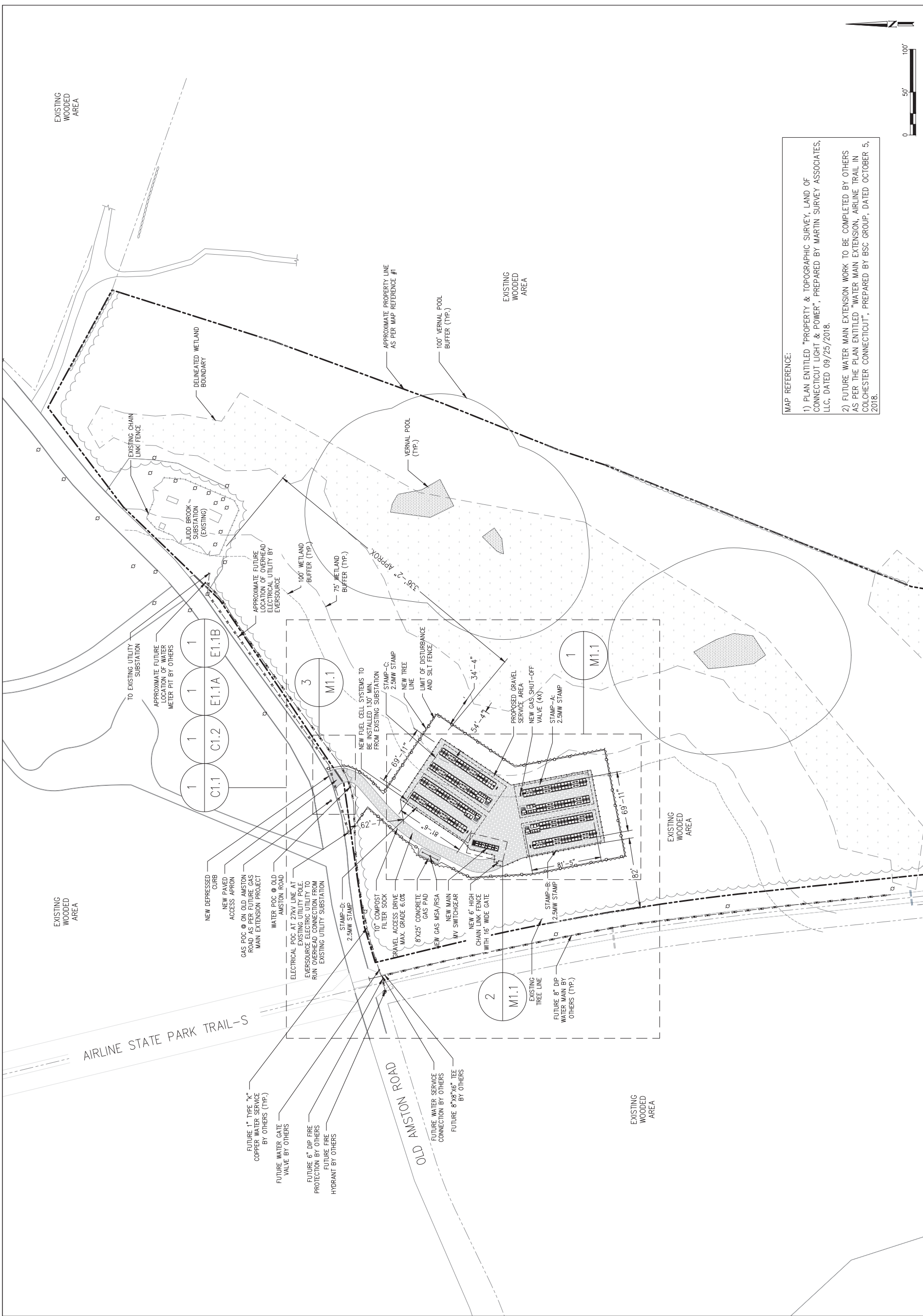
DRAWING NUMBER

G1.1

BLOOM DOCUMENT

DOC-1010853

THIS DRAWING IS 24" X 36" AT FULL SIZE	
SITE ID: EVS000.0	SHEET 03 OF 19



MAP REFERENCE:

- 1) PLAN ENTITLED "PROPERTY & TOPOGRAPHIC SURVEY, LAND OF CONNECTICUT LIGHT & POWER", PREPARED BY MARTIN SURVEY ASSOCIATES, LLC, DATED 09/25/2018.
- 2) FUTURE WATER MAIN EXTENSION WORK TO BE COMPLETED BY OTHERS AS PER THE PLAN ENTITLED "WATER MAIN EXTENSION, AIRLINE TRAIL IN COLCHESTER CONNECTICUT", PREPARED BY BSC GROUP, DATED OCTOBER 5, 2018.

OVERALL SITE PLAN

SCALE: 1" = 50'

1

G1.1



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ENGINEER OF RECORD
STEPHEN POWERS, P.E.
LICENSE # 0030199

CUSTOMER SITE

EVERSOURCE

160 OLD AMSTON ROAD
COLCHESTER, CT 06415

[illegible]

DESIGNED BY KATE TAYLOR	REVIEWED BY CHAD PEARSON
DRAWN BY SURESH KUMAR	APPROVED BY GREENBERG FARROW

SHEET TITLE

DETAILED SITE PLAN

DRAWING NUMBER

C1.1

BLOOM DOCUMENT

DOC-1010853

THIS DRAWING IS 24" X 36" AT FULL SIZE

SITE ID: EVS000.0	SHEET 04 OF 19
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GENERAL NOTES

1. CLEAN AND PRIME ALL NEW WIRE MOUNTED PIPING AND CONDUIT. PIPING AND CONDUIT SHALL BE PAINTED WITH EXTERIOR GRADE PAINT TO MATCH EXISTING.
2. CONDUITS AND PIPES MOUNTED TO BUILDING WALL SHALL BE SUPPORTED AS PER LOCAL CODE. RUN AT HEIGHT ABOVE DOORWAYS, AND STAND OFF WALL TO AVOID EXISTING CONDUITS AND PIPES.
3. SLOPE LINES SHOWN ARE APPROXIMATE AND INTENDED TO SHOW THE GENERAL DIRECTION OF WATER RUN OFF. SLOPE LINES ARE DRAWN PER VISUAL SURVEY OF SURROUNDING AREA.
4. SEE BLOOM ENERGY PROJECT INSTALLATION DRAWINGS FOR UTILITY CONNECTIONS TO ANCILLARY EQUIPMENT AND ENERGY SERVER.
5. ALL ABOVE FROST LINE SECTIONS OF WATER PIPES SHALL HAVE POWERED HAZ. TRACE AND INSULATION, ENSURE UNDERGROUND WATER PIPE DEPTHS ARE BELOW FROST LINE.

REFERENCE SHEET NOTES

- 1 NEW UTILITY PROVIDED AND INSTALLED GAS METER & REGULATOR ASSEMBLY WITH SHUT-OFF VALVE. CONTRACTOR SHALL PROVIDE PAD PER DETAILS IF REQUIRED BY UTILITY COMPANY. COORDINATE ALL CONNECTIONS WITH GAS UTILITY.
- 2 NEW UNDERGROUND GAS SERVICE TAP BY UTILITY COMPANY. COORDINATE WITH GAS UTILITY. CONTRACTOR SHALL PERFORM COMPACTATION AND MATCH EXISTING SURFACE AND GRADE. CONTRACTOR SHALL COORDINATE GAS PIPE SIZING AND INSTALLATION REQUIREMENTS WITH UTILITY. UTILITY TO INSTALL 8" MAIN IN STREET AND 6" GAS LINE ON PROPERTY TO GAS PAD.
- 4 NEW PRIVATE GAS SHUT-OFF VALVE. REFER TO GAS RISER DETAIL FOR ADDITIONAL REQUIREMENTS.
- 5 NEW GAS PIPE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. REFER TO GAS RISER DETAIL FOR ADDITIONAL REQUIREMENTS.
- 6 TAP EXISTING WATER LINE AT WATER METER PIT WITH A LOCAL SHUT-OFF VALVE. REFER TO DOMESTIC WATER CONNECTION DETAIL FOR ADDITIONAL REQUIREMENTS.
- 7 NEW WATER PIPE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. REFER TO WATER RISER DETAIL FOR ADDITIONAL REQUIREMENTS.
- 12 CONTRACTOR SHALL PROVIDE TWO GROUNDING RODS TO BE PLACED 6' APART MINIMUM. REFER TO ELECTRICAL SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- 13 NEW ELECTRICAL FEEDER SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. REFER TO ELECTRICAL SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- 15 NEW BLOOM ENERGY SERVER. REFER TO BLOOM STANDARD INSTALLATION DRAWING SET FOR ADDITIONAL ENERGY SERVER DETAILS.
- 16 FACTORY WIRED ENERGY SERVER EMERGENCY POWER-OFF SWITCH (PEPO).
- 20 CONTRACTOR SHALL EXCAVATE UNDER ENERGY SERVER AND NEUTRALIZATION PAD FOUNDATIONS. REFER TO PAD DETAIL FOR ADDITIONAL EXCAVATION AND BACKFILL REQUIREMENTS.
- 23 CONTRACTOR TO REMOVE TREES AND CLEAR AREA FOR INSTALLATION OF ENERGY SERVERS AND ASSOCIATED EQUIPMENT. PROVIDE 10' MINIMUM CLEARANCE FROM PROPOSED ENERGY SERVER TO DRIP LINE OF ANY EXISTING TREES.
- 24 PROPOSED LIMIT OF DISTURBANCE AND SILT FENCE.
- 25 NEW 6" HIGH CHAIN LINK FENCE WITH PRIVACY SCREENING.
- 26 VEHICLES SEE DETAIL ACCESS DRIVE (MAX GRADE 6%) FOR SERVICE PURPOSES. SEE DETAIL 1/22.1 FOR ADDITIONAL INFORMATION.
- 27 CONTRACTOR TO SUPPLY AND INSTALL STUB-UP CONVEIENCE OUTLETS.

EXISTING UTILITY NOTE:

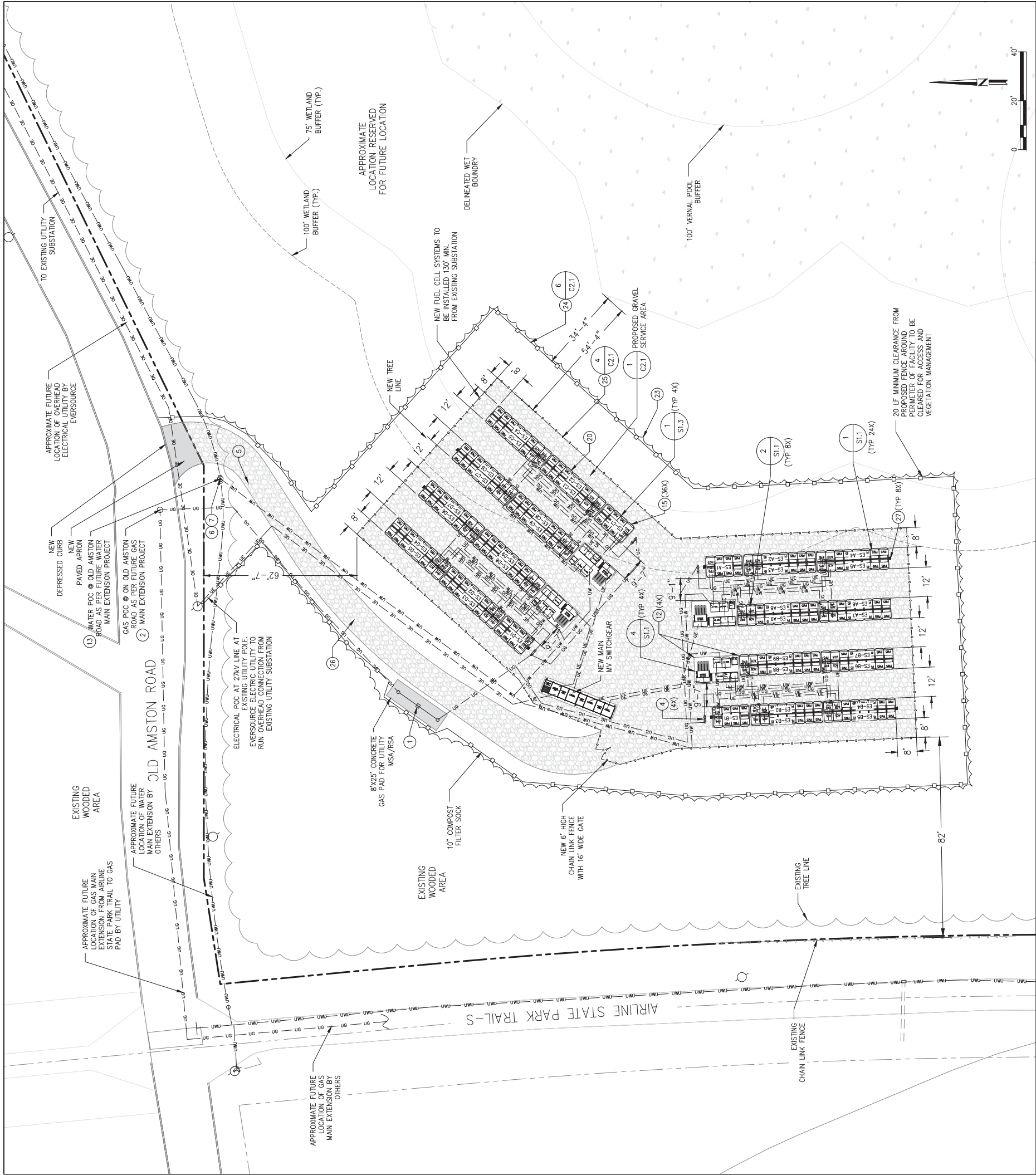
THE LOCATION OF EXISTING UTILITIES IS SHOWN FOR THE CONTRACTOR'S REFERENCE. EXACT LOCATION, DEPTH AND SIZE OF ALL EXISTING UTILITIES IS NOT KNOWN. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO FIELD EXISTING UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR EXISTING UTILITIES LOCATED IN THE UNDERGROUND UTILITIES FROM DAMAGE. WHEN CROSSING WITH AN UNDERGROUND UTILITY LINES, CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY DAMAGED LINES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER FROM THE INFORMATION PROVIDED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING GROUND IN APPROPRIATE AND MAY REQUIRE ADJUSTMENTS TO THE DESIGN TO AVOID CONFLICTS.

P REFERENCE:

PLAN ENTITLED "PROPERTY & TOPOGRAPHIC SURVEY, LAND OF CONNECTICUT LIGHT & POWER", PREPARED BY MARTIN SURVEY ASSOCIATES, LLC, DATED

/25/2018.
FUTURE WATER MAIN EXTENSION WORK TO BE COMPLETED BY OTHERS AS

FOR THE PLAN ENTITLED "WATER MAIN EXTENSION, AIRLINE TRAIL IN
 LANCHESTER CONNECTICUT", PREPARED BY BSC GROUP, DATED OCTOBER 5,
 8.



DETAILED SITE PLAN

SCALE: 1" = 20'

1	C1.1
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EROSION CONTROL NOTES

EROSION AND SEDIMENT CONTROL PLAN NOTES

1.

THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF PERMITEE AND/OR SWPC MONITOR. ALL PERIMETER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
2.

THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN IN A GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS, INCLUDING EXISTING AND PROPOSED CONSTRUCTION ACTIVITIES, ROADWAYS, UTILITIES, AND ADJACENT AREAS, SHALL BE MONITORED BY THE PERMITEE AND/OR SWPC MONITOR. SEE SEDIMENT AND EROSION CONTROL DETAILS AND SUGGESTED CONSTRUCTION SEQUENCE FOR MORE INFORMATION. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
3.

A BOND OR LETTER OF CREDIT MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
4.

THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE MEASURES MAY BE REQUIRED TO PROTECT SENSITIVE AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS FROM THE TOWN OF PERMITEE AND/OR SWPC MONITOR, ENGINEERING, INSPECTION, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.
5.

THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR INSTALLED SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS AS NECESSARY IN A TIMELY MANNER.
6.

THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (SILT FENCE, COMPOST FILTER SOCK, EROSION CONTROL BLANKET, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.
7.

ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN). SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.
8.

PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING, ORANGE SAFETY FENCE, CONSTRUCTION TAPE, OR EQUIVALENT FENCING/TAPE. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
9.

CONSTRUCTION ENTRANCES (ANTI--TRACKING PADS) SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION IF REQUIRED. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED. CONTRACTOR SHALL ENSURE THAT ALL VEHICLES EXITING THE SITE ARE PASSING OVER THE ANTI--TRACKING PADS PRIOR TO EXISTING.
10.

ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER.
11.

NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS. ALL SLOPES SHALL BE SEEDED AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
12.

DIRECT ALL Dewatering PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE THE GUIDELINES WITHIN THE APPROVED LIMIT OF DISTURBANCE IF REQUIRED. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE PERMITEE OR MUNICIPALITY.
13.

THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SECURED APPROPRIATELY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.
14.

MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE, MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.
15.

SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
16.

TURF ESTABLISHMENT SHALL BE PERFORMED OVER ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION. IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
17.

MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP CONCRETE PADS, CLEAN THE STORMWATER MANAGEMENT SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM PERMITEE OR THE MUNICIPALITY.
18.

SEEDING MIXTURES SHALL BE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES, OR APPROVED EQUAL BY OWNER.

SEDIMENT & EROSION CONTROL NARRATIVE

1.
- THE PROJECT INVOLVES THE CONSTRUCTION OF A FUEL CELL POWER GENERATION FACILITY WITH ASSOCIATED EQUIPMENT, INCLUDING THE CLEARING, GRUBBING AND GRADING OF APPROXIMATELY 0.69± ACRES OF EXISTING LOT.

THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:

- A.

CLEARING, GRUBBING, AND GRADING OF EXISTING LOT.
- B.

CONSTRUCTION OF FUEL CELL POWER GENERATION FACILITY WITH ASSOCIATED EQUIPMENT.
- B.

THE STABILIZATION OF DISTURBED AREAS WITH PERMANENT TREATMENTS.
2.

FOR THIS PROJECT, THERE ARE APPROXIMATELY 0.69± ACRE OF THE SITE BEING DISTURBED WITH NEGLIGIBLE INCREASE IN THE IMPERVIOUS AREA OF THE SITE, AS ALL ACCESS THOUGH THE SITE WILL BE GRAVEL. IMPERVIOUS AREAS ARE LIMITED TO THE CONCRETE PADS FOR EQUIPMENT.
3.

THE PROJECT SITE, AS MAPPED IN THE SOIL SURVEY OF STATE OF CONNECTICUT (NRCS, VERSION 18, DEC 6, 2018), CONTAINS TYPE 38C (HYDROLOGIC SOIL GROUP A), 61C (HYDROLOGIC SOIL GROUP B) AND 701B (HYDROLOGIC SOIL GROUP C). A GEOTECHNICAL ENGINEERING REPORT HAS NOT BEEN COMPLETED.
4.

IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 6–8 MONTHS.
5.

REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.
6.

STORMWATER MANAGEMENT DESIGN CRITERIA UTILIZES THE APPLICABLE SECTIONS OF THE 2004 CONNECTICUT STORMWATER MANAGEMENT DESIGN CRITERIA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS FROM THE TOWN OF PERMITEE AND/OR SWPC MONITOR, ENGINEERING, INSPECTION, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.
7.

DETAILS FOR THE TYPICAL STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON THE PLAN SHEETS OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.
8.

CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION AREA:

A.

STAGED CONSTRUCTION;

B.

MINIMIZE THE DISTURBED AREAS TO AS SOON AS POSSIBLE WITH TEMPORARY OR PERMANENT MEASURES;

D.

MINIMIZE IMPERVIOUS AREAS;

E.

UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.
- SUGGESTED CONSTRUCTION SEQUENCE
- THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROTECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE, THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS.
1.

THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE LIMITS OF DISTURBANCE IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.

2.

CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROPOSED WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNER REPRESENTATIVE(S), THE MUNICIPALITY, THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.

3.

NOTIFY TOWN OF COLCHESTER AGENT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT.

4.

NOTIFY DIG SAFE AT 811, AS REQUIRED, PRIOR TO THE START OF CONSTRUCTION.

5.

REMOVE EXISTING IMPEDIMENTS AS NECESSARY AND PROVIDE MINIMAL CLEARING AND GRUBBING TO INSTALL THE REQUIRED CONSTRUCTION ENTRANCES.

6.

CLEAR ONLY AS NEEDED TO INSTALL THE PERMETER EROSION AND SEDIMENTATION CONTROL MEASURES AND, IF APPLICABLE, TREE PROTECTION. ALL WETLAND AREAS SHALL BE PROTECTED BEFORE MAJOR CONSTRUCTION BEGINS.

7.

INSTALL REMAINING PERMETER EROSION AND SEDIMENTATION CONTROL MEASURES.

8.

PERFORM THE REMAINING CLEARING AND GRUBBING AS NECESSARY. REMOVE CUT WOOD AND STOCKPILE FOR FUTURE USE OR REMOVE OFF-SITE. REMOVE AND DISPOSE OF DEMOLITION DEBRIS OFF-SITE IN ACCORDANCE WITH APPLICABLE LAWS.

9.

TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION FOR THIRTY (30) DAYS OR MORE.

10.

INSTALL ELECTRICAL CONDUIT, GAS PIPES AND CONCRETE PADS.

11.

INSTALL FUEL CELLS AND COMPLETE GAS AND ELECTRICAL INSTALLATION.

12.

AFTER SUBSTANTIAL COMPLETION OF THE INSTALLATION OF THE FUEL CELLS, COMPLETE REMAINING SITE WORK, STABILIZE ALL DISTURBED AREAS.

13.

FINE GRADE, RAKE, SEED AND MULCH ALL REMAINING DISTURBED AREAS.

14.

AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE PERMITEE AND TOWN OF COLCHESTER AGENT, REMOVE PERMETER EROSION AND SEDIMENTATION CONTROLS.
- | EAS MEASURE | INSPECTION SCHEDULE | CONSTRUCTION OPERATION AND MAINTENANCE PLAN – BY CONTRACTOR |
|---------------------------|--|---|
| CONSTRUCTION ENTRANCE | DAILY | MAINTENANCE REQUIRED:
PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT. |
| COMPOST FILTER SOCK | WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25" | REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED. |
| TOPSOIL/BORROW STOCKPILES | DAILY | REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY. |
-
- CONSTRUCTION ENTRANCE DETAIL
- SCALE: NTS
-
1.

BEGIN AT THE LOCATION WHERE THE SOCK IS TO BE INSTALLED BY EXCAVATING A 2–3" (5–7.5 CM) DEEP X 9" (22.9 CM) TRENCH. PLACE THE SOCK IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE SOCK ON THE UPHILL SIDE. SOCKS SHALL BE INSTALLED IN 60 FT CONTINUOUS LENGTHS WITH ADJACENT SOCKS TIGHTLY ABUT. EVERY 60 FT THE SOCK ROW SHALL BE SPACED 12 INCHES CLEAR, END TO END, FOR AMPHIBIAN AND REPTILE TRAVEL. THE OPEN SPACES SHALL BE STAGGERED MID LENGTH OF THE NEXT DOWN GRADIENT SOCK.

3.

SECURE THE SOCK WITH 18–24" (45.7–61 CM) STAKES EVERY 3–4' (0.9 –1.2 M) AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE SOCK LEAVING AT LEAST 2–3" (5–7.5 CM) OF STAKE EXTENDING ABOVE THE SOCK. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.
- COMPOST FILTER SOCK SEDIMENTATION CONTROL BARRIER
- SCALE: NTS
-
- NOTES:

1.

ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

2.

SOIL /AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.

3.

RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

4.

STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
- MATERIALS STOCKPILE DETAIL
- SCALE: NTS
- 3
C2.5
- Bloomenergy
- 4353 N 1ST STREET
SAN JOSE, CA 95134
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- CUSTOMER SITE
- EVERSOURCE
- 160 OLD AMSTON ROAD
COLCHESTER, CT 06415
- EVERSOURCE
- | REVISION HISTORY | |
|------------------|-----------------|
| REV | REVISION ISSUE |
| 1 | INITIAL RELEASE |
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- | | |
|----------------------------|---------------------------------|
| DESIGNED BY
KATE TAYLOR | REVIEWED BY
CHAD PEARSON |
| DRAWN BY
SURESH KUMAR | APPROVED BY
GREENBERG FARROW |
- SHEET TITLE
- SOIL EROSION AND
SEDIMENT CONTROL DETAILS
- DRAWING NUMBER
- C2.5
- BLOOM DOCUMENT
- DOC–1010853
- THIS DRAWING IS 24" X 36" AT FULL SIZE
SITE ID: EVS000.0 SHEET 10 OF 19

Amended Exhibit 7

November 21, 2019

Mr. Justin Adams
Bloomenergy - Connecticut

Justin.Adams@bloomenergy.com

SUBJECT: Response to Siting Council Interrogatory – 9
Pertaining to the Acoustic Review of a Proposed Fuel Cell Facility
At 160 Old Amston Road, Colchester, CT

Dear Mr. Adams,

The following letter is my response to the Connecticut Siting Counsel's interrogatory (# 9) regarding the land use classification of the proposed fuel cell facility in Colchester, Connecticut. The interrogatory follows:

9. *Referencing Exhibit 7 of the Petition, page 2 of the Acoustic Review notes that the proposed fuel cell facility would be a Class C emitter. Would the fuel cell facility be considered a Class B emitter per the Connecticut Department of Energy and Environmental Protection (DEEP) Noise Control Regulations? If yes, would any noise mitigation measures be required to comply with DEEP Noise Control Standards?*

Response

It is my opinion that with respect to the DEEP Noise Control Regulation, the proposed fuel cell facility is appropriately classified as a Class C emitter. Section 22a-69-2 of the DEEP Noise Regulation (Appendix A of this letter) provides guidance in classifying both emitter and receptor Noise Zones. These classifications are based on the actual use of a parcel or tract under single ownership as detailed by the Standard Land Use Classification Manual of Connecticut (SLUCONN).

Section 22a-69-2.5 of the DEEP Noise Regulation (below) provides an abbreviated list of land uses that are designated as Class C noise zones:

Sec. 22a-69-2.5. Class C noise zone

Lands designated Class C shall generally be industrial where protection against damage to hearing is essential, and the necessity for conversation is limited. Class C Land Use Category. The land uses in this category shall include, but not be limited to, manufacturing activities, transportation facilities, warehousing, military bases, mining, and other lands intended for such uses.

The specific SLUCONN categories in Class C shall include:

- 2. Manufacturing — Secondary Raw Materials*
- 3. Manufacturing — Primary Raw Materials*
- 4. Transportation, Communications and Utilities — Except 46 and 47*
- 6. Services*
 - 637 Warehousing and Storage Services*
 - 66 Contract Construction Services*
 - 672 Protective Functions and Related Activities*
 - 675 Military Bases and Reservations*
- 8. Agriculture*
 - 83 Forestry Activities and Related Services*
 - 84 Commercial Fishing Activities and Related Services*
 - 85 Mining Activities and Related Services*
 - 89 Other Resource Production and Extraction, N.E.C. **

**Not Elsewhere Classified*

(Effective June 15, 1978)

Note that SLUCONN categories 46 and 47 pertain to Automobile Parking (46) and Communication (47) which are designated as Class B Noise Zones.

As indicated above land use associated with Utilities are categorized as Class C Noise Zones. Since the fuel cell facility will operate as a utility (supplying electric power to the grid) and will share a parcel with a substation (which is also a Class C emitter) I believe that the Acoustic Review (Exhibit 7 of the Petition) appropriately classifies the proposed fuel cell facility as a Class C emitter.

Sincerely,
CAVANAUGH TOCCI



Douglas H. Bell
19213/Response to Siting Council Interrogatory - Noise.docx



Appendix A

**Regulations of Connecticut State Agencies
Title 22a. Environmental Protection
Connecticut Department of Energy and Environmental Protection
Sec. 22a-69-2**

Sec. 22a-69-2. Classification of land according to use

Sec. 22a-69-2.1. Basis

Noisy Zone classifications shall be based on the actual use of any parcel or tract under single ownership as detailed by the Standard Land Use Classification Manual of Connecticut (SLUCONN).

(Effective June 15, 1978)

Sec. 22a-69-2.2. Multiple uses

Where multiple uses exist within a given Noise Zone, the least restrictive land use category for the Emitter and Receptor shall apply regarding the noise standards specified in Section 3 of these Regulations.

(Effective June 15, 1978)

Sec. 22a-69-2.3. Class A noise zone

Lands designated Class A shall generally be residential areas where human beings sleep or areas where serenity and tranquility are essential to the intended use of the land. Class A Land Use Category. The land uses in this category shall include, but not be limited to, single and multiple family homes, hotels, prisons, hospitals, religious facilities, cultural activities, forest preserves, and land intended for residential or special uses requiring such protection.

The specific SLUCONN categories in Class A shall include:

1. Residential

- 11 Household Units*
- 12 Group Quarters
- 13 Mobile Home Parks and Courts
- 19 Other Residential

5. Trade

- 583 Residential Hotels
- 584 Hotels, Tourist Courts and Motels
- 585 Transient Lodgings

6. Services

- 651 Medical and Other Health Services; Hospitals
- 674 Correctional Institutions
- 691 Religious Activities

7. Cultural, Entertainment and Recreational

- 711 Cultural Activities
- 712 Nature Exhibitions
- 713 Historic and Monument Sites

*Mobile homes are included if on foundations

9. Undeveloped, Unused and Reserved Lands and Water Areas

92 Reserved Lands

941 Vacant Floor Area—Residential

(Effective June 15, 1978)

Sec. 22a-69-2.4. Class B noise zone

Lands designated Class B shall generally be commercial in nature, areas where human beings converse, and such conversation is essential to the intended use of the land. Class B Land Use Category. The land uses in this category shall include, but not be limited to, retail trade, personal, business and legal services, educational institutions, government services, amusements, agricultural activities, and lands intended for such commercial or institutional uses.

The specific SLUCONN categories in Class B shall include:

4. Transportation, Communication and Utilities

46 Automobile Parking

47 Communication

5. Trade

51 Wholesale Trade

52 Retail Trade - Building Materials

53 Retail Trade - General Merchandise

54 Retail Trade - Food

55 Retail Trade - Automotive Dealers and Gasoline Service Stations

56 Retail Trade - Apparel and Accessories

57 Retail Trade - Furniture, Home Furnishings and Equipment

58 Retail Trade - Eating, Drinking and Lodging - Except 583, 584, and 585

59 Retail Trade - N.E.C.*

6. Services

61 Finance, Insurance and Real Estate Services

62 Personal Services

63 Business Services—Except 637

64 Repair Services

65 Professional Services—Except 651

67 Government Services—Except 672, 674, and 675

68 Educational Services

69 Miscellaneous Services—Except 691

7. Cultural, Entertainment and Recreational

71 Cultural Activities and Nature Exhibitions—Except 711, 712, and 713

72 Public Assembly

73 Amusements

74 Recreational Activities

75 Resorts and Group Camps

- 76 Parks
- 79 Other, N.E.C.*
- *Not Elsewhere Classified
- 8. Agriculture
 - 81 Agriculture
 - 82 Agricultural Related Activities
- 9. Undeveloped, Unused, and Reserved Lands and Water Area
 - 91 Undeveloped and Unused Land Area
 - 93 Water Areas
 - 94 Vacant Floor Area—Except 941
 - 99 Other Undeveloped Land and Water Areas, N.E.C.*
- *Not Elsewhere Classified

(Effective June 15, 1978)

Sec. 22a-69-2.5. Class C noise zone

Lands designated Class C shall generally be industrial where protection against damage to hearing is essential, and the necessity for conversation is limited. Class C Land Use Category. The land uses in this category shall include, but not be limited to, manufacturing activities, transportation facilities, warehousing, military bases, mining, and other lands intended for such uses.

The specific SLUCONN categories in Class C shall include:

- 2. Manufacturing — Secondary Raw Materials
- 3. Manufacturing — Primary Raw Materials
- 4. Transportation, Communications and Utilities — Except 46 and 47
- 6. Services
 - 637 Warehousing and Storage Services
 - 66 Contract Construction Services
 - 672 Protective Functions and Related Activities
 - 675 Military Bases and Reservations
- 8. Agriculture
 - 83 Forestry Activities and Related Services
 - 84 Commercial Fishing Activities and Related Services
 - 85 Mining Activities and Related Services
 - 89 Other Resource Production and Extraction, N.E.C.*

*Not Elsewhere Classified

(Effective June 15, 1978)

Amended Exhibit 8

ENVIRONMENTAL NOTES

Wetland and Vernal Pool Protection Plan

As a result of the proposed development's location in the vicinity of wetlands and vernal pool habitat, the following Best Management Practices ("BMPs") are recommended to avoid unintentional impact to wetland habitats or mortality to vernal pool herpetofauna (i.e., spotted salamander, wood frog, turtles, etc.) during construction activities. This plan includes elements that will protect herpetofauna should construction activities occur during peak amphibian movement periods (early spring breeding [March 1st to May 15th] and late summer dispersal [July 15th to September 15th]) as well as wetlands regardless of the time of year. Complete details of the recommended BMPs are provided below, which will be incorporated into the construction drawings to ensure the Contractor is fully aware of the project's environmentally sensitive setting.

A wetland scientist from All-Points Technology Corp. ("APT") experienced in compliance monitoring of construction activities will serve as the Environmental Monitor for this project to ensure that the following BMPs are implemented properly. The proposed wetland and vernal pool protection program consists of several components including: isolation of the tower/compound perimeter; periodic inspection and maintenance of erosion controls and isolation structures; herpetofauna sweeps; education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; and, reporting.

1. Erosion and Sedimentation Controls

- a. Plastic netting with large mesh openings ($> \frac{1}{4}$ ") used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent erosion control products or reinforced silt fence will be used on the project. Temporary erosion control products that will be exposed at the ground surface represent a potential for wildlife entanglement will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (netless) or netting with a mesh size $< \frac{1}{4}$ " such as that typically used in compost filter socks to avoid/minimize wildlife entanglement.
- b. Installation of erosion and sedimentation controls, required for erosion control compliance and creation of a barrier to possible migrating/dispersing herpetofauna, shall be performed by the Contractor following clearing activities and prior to any earthwork. The Environmental Monitor will inspect the work zone area prior to and following erosion control barrier installation to ensure the area is free of herpetofauna and satisfactorily installed. The intent of the barrier is to segregate the majority of the work zone from migrating/dispersing herpetofauna. Oftentimes complete isolation of a work zone is not feasible due to accessibility needs and locations of staging/material storage areas, etc. In those circumstances, the barriers will be positioned to deflect migrating/dispersal routes away from the work zone to minimize potential encounters with herpetofauna.
- c. If a staging area for equipment, vehicles or construction materials is required for this project, such area(s) shall be located outside of any wetland resource Buffer Zone and surrounded by silt fence to isolate the area from possible migrating herpetofauna.
- d. All erosion control measures shall be removed within 30 days of completion of work and permanent stabilization of site soils so that herpetofauna movements between uplands and wetlands are not restricted.

2. Contractor Education:

- a. Prior to work on site and initial deployment/mobilization of equipment and materials, the Contractor shall attend an educational session at the pre-construction meeting with the Environmental Monitor. This orientation and educational session will consist of information such as, but not limited to: representative photographs of typical herpetofauna that may be encountered, rare that could be encountered (if possible), typical species behavior, and proper procedures to protect such species if they are encountered. The meeting will further emphasize the non-aggressive nature of these species, the absence of need to destroy such animals and the need to follow Protective Measures as described in Section 4 below. The Contractor will designate one of its workers as the "Project Monitor", who will receive more intense training on the identification and proper handling of herpetofauna.
- b. The Contractor will designate a member of its crew as the Project Monitor to be responsible for the daily "sweeps" for herpetofauna within the work zone each morning, during any and all transportation of vehicles along the access drive, and for any ground disturbance work. This individual will receive more intense training from the Environmental Monitor on the identification and protection of herpetofauna in order to perform sweeps. Any herpetofauna discovered will be reported to the Environmental Monitor, photographed if possible, and relocated outside the work zone in the general direction the animal was oriented.
- c. The Environmental Monitor will also post caution signs throughout the project site and maintain them for the duration of construction to provide notice of the environmentally sensitive nature of the work area, the potential for encountering various amphibians and reptiles and precautions to be taken to avoid injury to or mortality of these animals.
- d. The Contractor will be provided with the Environmental Monitor's cell phone and email contact information to immediately report any encounters with herpetofauna.

3. Petroleum Materials Storage and Spill Prevention

- a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location in proximity to sensitive wetland resources.
- b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.
- c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.
 - i. Petroleum and Hazardous Materials Storage and Refueling
 1. Refueling of vehicles or machinery shall take place on an impervious pad with secondary containment designed to contain fuels.
 2. Any refueling drums/tanks or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.
 - ii. Initial Spill Response Procedures
 1. Stop operations and shut off equipment.

2. Remove any sources of spark or flame.
3. Contain the source of the spill.
4. Determine the approximate volume of the spill.
5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.
6. Ensure that fellow workers are notified of the spill.

iii. Spill Clean Up & Containment

1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.
2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.
3. Isolate and eliminate the spill source.
4. Contact the appropriate local, state and/or federal agencies, as necessary.
5. Contact a disposal company to properly dispose of contaminated materials.

iv. Reporting

1. Complete an incident report.
2. Submit a completed incident report to local, state and federal agencies, as required.

4. Protective Measures

- a. A thorough cover search of the construction area will be performed by the Environmental Monitor for herpetofauna prior to and following installation of erosion control measures/silt fencing barriers to remove any species from the work zone prior to the initiation of construction activities. Any herpetofauna discovered would be relocated outside the work zone in the general direction the animal was oriented. Periodic inspections will be performed by the Environmental Monitor throughout the duration of construction.
- b. The Contractor's Project Monitor will inspect the work area each morning and escort initial vehicle access into the site each morning along the access drive to visually inspect for any herpetofauna. Any herpetofauna discovered would be relocated outside the work zone in the general direction the animal was oriented.
- c. Any herpetofauna requiring relocation out of the work zone will be captured with the use of a net or clean plastic bag that has been moistened with clean water for careful handling and placement out of the work zone in the general direction it was observed heading.
- d. Any stormwater management features, ruts or artificial depressions that could hold water created intentionally or unintentionally by site clearing/construction activities will be properly filled in and permanently stabilized with vegetation to avoid the creation of vernal pool "decoy pools" that could intercept amphibians moving toward the vernal pools. Stormwater management features such as level spreaders will be carefully reviewed in the field to ensure that standing water does not endure for more than a 24 hour period to avoid creation of decoy pools and may be subject to field design changes. Any such proposed design changes will be reviewed by the design engineer to ensure stormwater management functions are maintained.

5. Reporting

- a. Inspection reports (brief narrative and applicable photos) will be prepared by the Environmental Monitor documenting each inspection and submitted to the Permittee for compliance verification. Any non-compliance observations of erosion control measures or evidence of erosion or sediment release will be immediately reported to the Permittee and its Contractor and included in the reports.
- b. Any incidents of release of sediment or other materials into wetland resource areas shall be reported by the Permittee within 24 hours to the Connecticut Siting Council.
- c. Any observations of rare species will be reported to the Connecticut Department of Energy and Environmental Protection's Natural Diversity Data Base Program.
- d. Following completion of the project, a summary report will be prepared by the Environmental Monitor documenting compliance with the Wetland and Vernal Pool Protection Plan and submitted to the Permittee, who shall submit a copy to the Connecticut Siting Council.